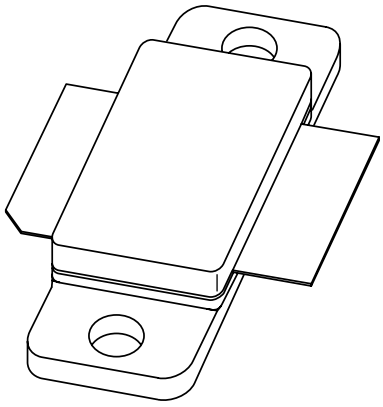
查询BLF1047供应商

DATA SHEET



BLF1047
UHF power LDMOS transistor

Preliminary specification
Supersedes data of 1999 July 01

2000 Feb 02

Philips
Semiconductors

PHILIPS

UHF power LDMOS transistor BLF1047

FEATURES

- High power gain
- Easy power control
- Excellent ruggedness
- Source on underside eliminates DC isolators, reducing common mode inductance
- Designed for broadband operation (HF to 1 GHz).

APPLICATIONS

- Communication transmitter applications in the UHF frequency range.

DESCRIPTION

Silicon N-channel enhancement mode lateral D-MOS transistor encapsulated in a 2-lead flange package (SOT541A) with a ceramic cap. The common source is connected to the mounting flange.

PINNING - SOT541A

PIN	DESCRIPTION
1	drain
2	gate
3	source, connected to flange

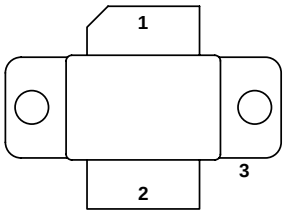


Fig.1 Simplified outline.

QUICK REFERENCE DATA

RF performance at T_h = 25 °C in a common source test circuit.

MODE OF OPERATION	f (MHz)	V_{DS} (V)	P_L (W)	G_p (dB)	η_D (%)	d_{im} (dBc)
CW, class-AB (2-tone)	f_1 = 960; f_2 = 960.1	26	70 (PEP)	>14	>35	≤–26
CW, class-AB (1-tone)	960	26	70	>14	>45	–

CAUTION
This product is supplied in anti-static packing to prevent damage caused by electrostatic discharge during transport and handling. For further information, refer to Philips specs.: SNW-EQ-608, SNW-FQ-302A and SNW-FQ-302B.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_{DS}	drain-source voltage	–	65	V
V_{GS}	gate-source voltage	–	±20	V
I_D	drain current (DC)	–	9	A
T_{stg}	storage temperature	–65	+150	°C
T_j	junction temperature	–	200	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}h}$	thermal resistance from junction to heatsink	T_h = 25 °C, P_{dis} = 100 W; note 1	1.15	K/W

Note

1. Determined under specified RF operating conditions, based on maximum peak junction temperature.

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)DSS}$	drain-source breakdown voltage	V_{GS} = 0; I_D = 1.4 mA	65	–	–	V
V_{GSth}	gate-source threshold voltage	V_{DS} = 10 V; I_D = 140 mA	4	–	5	V
I_{DSS}	drain-source leakage current	V_{GS} = 0; V_{DS} = 26 V	–	–	10	μA
I_{DSX}	drain cut-off current	V_{GS} = V_{GSth} + 9 V; V_{DS} = 10 V	20	–	–	A
I_{GSS}	gate leakage current	V_{GS} = ±20 V; V_{DS} = 0	–	–	250	nA
g_{fs}	forward transconductance	V_{DS} = 10 V; I_D = 5 A	–	3	–	S
R_{DSon}	drain-source on-state resistance	V_{GS} = V_{GSth} + 9 V; I_D = 5 A	–	200	–	mΩ
C_{is}	input capacitance	V_{GS} = 0; V_{DS} = 26 V; f = 1 MHz	–	75	–	pF
C_{os}	output capacitance	V_{GS} = 0; V_{DS} = 26 V; f = 1 MHz	–	65	–	pF
C_{rs}	feedback capacitance	V_{GS} = 0; V_{DS} = 26 V; f = 1 MHz	–	2.5	–	pF

APPLICATION INFORMATION

RF performance in a common source class-AB circuit. T_h = 25 °C; $R_{th\ j\text{-}h}$ = 1.15 K/W, unless otherwise specified.

MODE OF OPERATION	f (MHz)	V_{DS} (V)	P_L (W)	G_p (dB)	η_D (%)	d_{im} (dBc)
CW, class-AB (2-tone)	f_1 = 960; f_2 = 960.1	26	70 (PEP)	>14	>35	≤–26
CW, class-AB (1-tone)	960	26	70	>14	>45	–

Ruggedness in class-AB operation

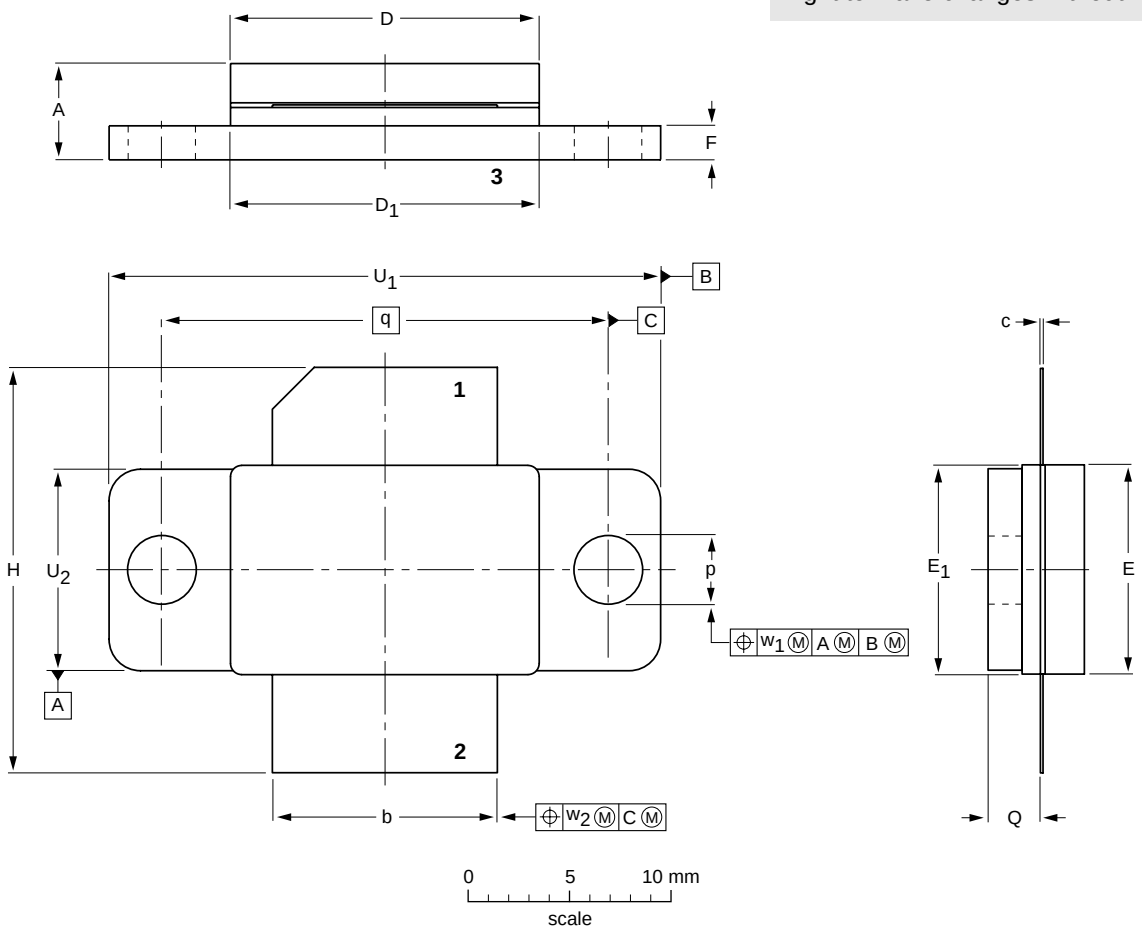
The BLF1047 is capable of withstanding a load mismatch corresponding to VSWR = 10 : 1 through all phases under the following conditions: V_{DS} = 26 V; f = 960 MHz at rated load power.

PACKAGE OUTLINE

Flanged LDMOST ceramic package; 2 mounting holes; 2 leads **SOT541A**

Package under development

Philips Semiconductors reserves the right to make changes without notice.



DIMENSIONS (millimetre dimensions are derived from the original inch dimensions)

UNIT	A	b	c	D	D_1	E	E_1	F	H	p	Q	q	U_1	U_2	w_1	w_2
mm	5.74 4.60	11.05 10.80	0.18 0.10	15.39 15.09	15.39 15.09	10.26 10.06	10.29 10.03	1.78 1.52	20.83 19.81	3.43 3.18	2.69 2.44	22.10	27.31 27.05	9.91 9.65	0.25	0.51
inches	0.226 0.181	0.435 0.425	0.007 0.004	0.606 0.594	0.606 0.594	0.404 0.396	0.405 0.395	0.070 0.060	0.820 0.780	0.135 0.125	0.106 0.096	0.87	1.075 1.065	0.390 0.380	0.01	0.02

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT541A						~~99-12-28~~ 00-01-13

DEFINITIONS

Data Sheet Status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

NOTES

NOTES

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